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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,713	09/23/2003	John C. Rudelic	ITL.1009US (P15534)	1545

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TROP PRUNER & HU, PC
8554 KATY FREEWAY
SUITE 100
HOUSTON, TX 77024

EXAMINER	
GU, SHAWN X	

ART UNIT	PAPER NUMBER
2189	

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/668,713	RUDELIC, JOHN C.	
	Examiner	Art Unit	
	Shawn Gu	2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11,17-20,24 and 25* is/are rejected.

7)☒ Claim(s) *12-16,21-23 and 26-30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is responsive to the application filed on 23 September, 2003.

Claims 1-30 are presented for examination.

Claims 1-30 are pending.

Specification

The disclosure is objected to because of the following informalities: in line 16 of page 7, the sentence appears to contain grammatical error.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5-8, 11 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As for claims 5-8 and 20, it is unclear to the examiner what exactly is meant by "ascending" (claims 5-7, 20) and "descending" (claim 8, 20) when the terms refer to

segments. The examiner is not sure whether the terms are referring to the physical/logical addresses, or some other standard of measurement related to the segments, such as the numbering sequence. The examiner is interpreting the claims in light of the latter meaning.

As for claim 11, it is unclear to the examiner what exactly is meant by "ascending order". The examiner is not sure whether the terms are referring to the physical/logical addresses, or some other standard of measurement, such as the numbering sequence.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 9, and 17 are rejected under U.S.C. 102(e) as being anticipated by Olson et al. [6,842,823 B1] (hereinafter "Olson").

As for claim 1, Olson discloses a method comprising:

causing data of a first type to be stored in a first level of (Fig 2, Second Memory 42) a unified memory device (Fig 2, RAM 20) and data of a second type to be stored in a second level (Fig 2, First Memory 40) of the unified memory device (Col 3, Lines 47-66; Col 4, Lines 1-22).

As for claim 2, Olson further discloses that in the method described in claim 1, data of a first type is persistent data (Col 4, Lines 16-18) and the data of a second type is dynamic data (Col 4, Lines 8-10; Col 3, Lines 49-54).

As for claim 3, Olson further discloses that the method described in claim 1 causes a logical memory management boundary to be disposed between the first level and the second level (Col 3, Lines 49-54).

As for claims 9 and 17, it is clear that the method described in claims 1-3 combined is performed by the apparatus in claim 9 and the instructions comprised in the machine-readable storage article in claim 17.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the

> subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4, 5, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson, in further view of Tanenbaum and Woodhull [Operating Systems, 2nd Edition, 1997] (hereinafter "Tanenbaum").

As for claims 4, 5, and 7, Olson already substantially discloses the claims as described above, but it does not teach causing data fragments to be stored in respectively ascending segments of the first level by application of a fragmented store algorithm. However, Tanenbaum discloses a memory management method called Segmentation (Page 343-346) wherein data fragments such as Symbol Table and Source Text are stored in ascending segments (Page 345, Fig 4-20) of a memory by a fragmented store algorithm (the method of Segmentation must include such algorithm). Segmentation provides advantages such as simplifying the handling of data structures and the linking up of procedures that were compiled separately (Page 346, Lines 3-8), and therefore it would have been obvious to one ordinarily skilled in the art at the time of the applicant's invention that Segmentation can be incorporated into the method disclosed by Olson.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olson.

As for claim 24, Olson already substantially discloses the claim as described above, but does not teach an antenna coupled to the storage device. However, Olson does teach a network connection coupled to the storage device (Col 3, Lines 43-44). It would have been obvious to one ordinarily skilled in the art at the time of the applicant's invention that a wireless network utilizing an antenna is a type of network connection with improved mobility and lower cost, and an antenna must be coupled to the storage device in order for it to be connected to the wireless network.

Claims 10, 18, 19, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson, in further view of Tashiro et al [US 2002/0147900 A1] (hereinafter "Tashiro") and Sahni [Data Structures, Algorithms, and Applications in Java, 2000] (hereinafter "Sahni").

As for claims 10, 18, and 25, Olson already substantially discloses the claims as described above, but it does not teach data fragments and associated unit headers in the first level, or object pointers and associated data units in the second level. However, Tashiro teaches a level of persistent data fragments (partition/region, Page 2, Paragraph 0026) wherein a plurality of data fragments are stored with a plurality of unit headers, each of the unit headers associated with a respective one of the plurality of data fragments (Fig 2; Page 2, Paragraph 0026). This arrangement allows information stored in the headers to be used in managing the data fragments in order to improve processing speed (Page 1, Paragraph 0002), and it would have been obvious to one

ordinarily skilled in the art at the time of the applicant's invention that Tashiro's teaching can be incorporated into that of Olson in order to improve processing speed.

Furthermore, Sahni teaches a method of dynamic data storage called Linked List (Page 190-191), wherein a level of memory comprises a plurality of object pointers and a plurality of data units, each of the object pointers associated with a respective one of the plurality of data units (Page 190, Fig 6.1; Page 191, Fig 6.2 and Fig 6.3). Linked Lists improves insertion and removable performances over other methods of dynamic data storage such as Arrays (Page 204), and it would have been obvious to one ordinarily skilled in the art at the time of the applicant's invention that Sahni's teaching can be incorporated into that of Olson in further view of Tashiro, in order to further improve performance.

As for claim 19, Olson already substantially discloses the claim as described above, in further view of Tashiro and Sahni, but it does not teach storing a plurality of sequence tables in the first memory level. However, Tashiro teaches a plurality of sequence tables (Fig 3, each row 1-3 is a table) in a level of memory for persistent storage (Page 2, Paragraph 0030, main storage device), which contains information for managing the data fragments (partitions) in order to improve processing speed (Page 1, Paragraph 0002). Therefore, it would have been obvious to one ordinarily skilled in the art at the time of the applicant's invention that Tashiro's teach can be incorporated in Olson's invention in order to improve processing speed.

Allowable Subject Matter

Claims 12-16, 21-23, 26-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 6, 8, 11, and 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn Gu whose telephone number is (571) 272-0703. The examiner can normally be reached on 9am-5pm, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571)272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shawn X Gu
Assistant Examiner
Art Unit 2189

23 October 2005

KEVIN VERBRUGGE
PRIMARY EXAMINER